

Patent claims

1. Method for operating a radio system with stations (MS1, MS2, MS3, MS4), in which
 - a first emitting station (MS1) is equipped with a directional antenna (RA),
 - the first emitting station (MS1) provides for transmission of data (D1) to a first receiving station (MS3) by means of the directional antenna (RA) in a first spatial radio area (F1)
 - and the first emitting station (MS1) broadcasts direction information (RI) which reveals the spatial direction (\vec{R}_1) in which it provides for the transmission of the data (D1).
2. Method in accordance with Claim 1, in which
 - a second emitting station (MS2) receives the direction information (RI),
 - and the direction information (RI) is taken into account for its occupation of transmission resources.
3. Method in accordance with Claim 2, in which
 - the second emitting station (MS2) is equipped with a directional antenna (RA),
 - the second emitting station (MS2) provides for transmission of data (D2) to a second receiving station (MS4) by means of its directional antenna (RA) in a second spatial radio area (F2),
 - the second emitting station (MS2) checks on the basis of the direction information (RI) of the first emitting station whether the first and the second spatial radio area (F1, F2) overlap at one of the receiving stations (MS3, MS4)
 - and the first and second emitting station (MS1, MS2) transmit their data (D1, D2), with the transmission only taking place at least partly simultaneously if the first

and the second spatial radio area (F1, F2) do not overlap at any of the receiving stations (MS3, MS4).

4. Method in accordance with Claim 3, in which
the second emitting station (MS2) broadcasts direction
5 information (RI) which reveals the spatial direction (\vec{R}_2) in
which it provides for transmission of its data (D2).
5. Method in accordance with one of the previous claims, in which
the stations (MS1, MS2, MS3, MS4) of the radio system broadcast
position information (GI) about their geographical position
10 ((x_1, y_1), (x_2, y_2), (x_3, y_3), (x_4, y_4)).
6. Method in accordance with one of the previous claims, in which
the first emitting station (MS1) broadcasts information about a
time interval (Z1) provided for transmission of its data (D1)
to the first receiving station (MS3).
- 15 7. Method in accordance with one of the Claims 3 to 6, in which
the second emitting station (MS2) after checking the
overlapping of the first and second spatial radio area (F1,
F2), broadcasts information (ZI) about a time interval (Z2)
provided for transmission of its data (D2) to the second
20 receiving station (MS4).
8. Method in accordance with one of the previous claims, in which
the direction information (RI) specifies the geographical
position ((x_1, y_1), (x_2, y_2)) of the relevant emitting station
(MS1, MS2) and the relevant spatial direction (\vec{R}_1 , \vec{R}_2), in
25 which the signals are emitted.
9. Method in accordance with one of the previous claims, in which
the direction information (RI) specifies the geographical
position (GP) of the relevant receiving station (MS3, MS4).

10. Method in accordance with one of the previous claims, in which the direction information (RI) contains antenna information (AI) about the characteristics of the directional antenna used.
11. Method in accordance with one of the previous claims, in which
5 the radio system is a cellular radio system or a wireless local area network.
12. Method in accordance with one of the previous claims, in which at least one of the emitting stations (MS1, MS2) and/or at least one of the receiving stations (MS3, MS4) is a mobile station.
- 10 13. Emitting station (MS; MS1, MS2) for a radio system,
- with at least one directional antenna (RA) for transmission of data (D; D1, D2),
- with at least one omnidirectional antenna (OA) for broadcasts
15 - with means (M) for determining direction information (RI_s; RI), which reveals the spatial direction (\vec{R}_1 , \vec{R}_2) in which the emitting station (MS; MS1, MS2) provides for the transmission of the data (D; D1, D2),
- and with means (SE) for broadcasting the direction
20 information (RI_s; RI)
14. Radio system with a emitting station (MS; MS1, MS2)
- which features at least one directional antenna (RA) for transmission of data (D; D1, D2),
- which features at least one omnidirectional antenna (OA) for
25 broadcasts,
- which features means (M) with which direction information (RI_s, RI) is determined which reveals the spatial direction (\vec{R}_1 , \vec{R}_2) in which it provides for the transmission of the data (D; D1, D2),
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- and which features means (SE) for broadcasting the direction information (RI_s ; RI).